

REMARKS

This Amendment and Response to Final Office Action is being submitted in response to the final Office Action mailed March 23, 2006. Claims 1-17 are pending in the Application.

Claims 1-10 and 12-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. (US Publication 2002/0101636).

Claims 11 and 16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. in view of Moon et al. (US Publication 2003/0184843).

In response to these rejections, the Claims have been amended herein, without prejudice or disclaimer to continued examination on the merits. These amendments are fully supported in the Specification, Drawings, and Claims of the Application and no new matter has been added. Based upon the amendments, reconsideration of the Application is respectfully requested, without further search, in view of the following remarks.

Rejection of Claims 1-10 and 12-15 Under 35 U.S.C. 103(a) - Xiao et al.:

Claims 1-10 and 12-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. (US Publication 2002/0101636).

Specifically, Examiner states that Xiao et al. do not teach or suggest that their optical node apparatus is reconfigurable while in-service or that it comprises connections to permit an in-service upgrade from a broadcast architecture to a spectrally blocking architecture, permitting spectral wavelength reuse in subsequent portions of a network; or wherein the optical node apparatus comprises connections to permit in-service maintenance.

Examiner further states, however, that it would have been obvious to one of ordinary skill in the art at the time of the invention to automate the optical node apparatus of Xiao et al. in the above manner, since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same results involves only routine skill in the art.

Claim 1 has been amended to recite:

1. An optical node apparatus, comprising:

a through path coupler having at least first and second outputs, the through path coupler configured to optically connect to an input port for receiving an input optical signal and configured to provide a first through optical signal on the first output and a second through optical signal on the second output;

a first optical filter for optically connecting to the first output port and configured to filter the first through optical signal; and

a selective connector configured for enabling selective optical connection to an output of the first optical filter;

wherein the second output port **is initially left unconnected** and is configured to accept a second optical filter and the selective connector is configured to switch optical connection to an output of the second optical

filter without any substantial disruption to an operation of the optical node apparatus;

wherein the optical node apparatus is reconfigurable while in-service and comprises connections to permit an in-service upgrade from a broadcast architecture to a spectrally blocking architecture, permitting spectral wavelength reuse in subsequent portions of a network;

wherein the optical node apparatus comprises connections to permit in-service maintenance; and

wherein the in-service upgrade and the in-service maintenance are made without requiring that the optical node be shut down and without service disruptions.

Likewise, Claim 13 has been amended to recite:

13. A fiber optic transmission system, comprising:

a plurality of transmitters configured to transmit input signals;

a multiplexer optically connected to a fiber optic line, said multiplexer configured to multiplex signals from the plurality of transmitters to the fiber optic line;

a demultiplexer optically connected to the fiber optic line, the demultiplexer configured to demultiplex optical signals from the fiber optic line;

a plurality of receivers configured to receive the demultiplexed signals from the demultiplexer; and

one or more optical add/drop nodes of claim 3 optically placed between the multiplexer and the demultiplexer;

wherein an optical node apparatus within the fiber optic transmission system is reconfigurable while in-service and comprises connections to permit an in-service upgrade from a broadcast architecture to a spectrally blocking architecture, permitting spectral wavelength reuse in subsequent portions of a network;

wherein an optical node apparatus within the fiber optic transmission system comprises connections to permit in-service maintenance; and

wherein the in-service upgrade and the in-service maintenance are made without requiring that the optical node be shut down and without service disruptions.

These amendments are fully supported throughout the Specification.

Although Examiner states, relying on *In re Venner*, 120 USPQ 193, that it would have been obvious to one of ordinary skill in the art at the time of the invention to automate the optical node apparatus of Xiao et al. since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same results involves only routine skill in the art, Applicant asserts otherwise.

Applicant asserts that *In re Venner*, 120 USPQ 193, is not applicable related to the present invention. In *In re Venner* (as is also discussed in MPEP 2144.04), the court held that broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art. The specific technical invention of *In re Venner* included a permanent mold casting apparatus for molding trunk pistons. As the trunk pistons are made in the mold, they are to be removed or released after a certain period of time. The inventor added to the old mold structures a timer and solenoid which automatically actuates the known pressure valve system to release the inner core after a certain period of time has elapsed. Thus, the inventor merely automated the known molding system with a timer for taking care of the release function that already existed in a manual process.

The ability to provide in-service maintenance and in-service upgrades, without requiring that the optical node be shut down and without service disruptions, as in the present invention is, on the other hand, not mere automation of an existing functionality. In the molding system, it was known that at a certain time, a mold should be released, but the function was yet to be automated. With the addition of the timer and solenoid, that function was automated. In the present invention, the in-service maintenance and in-service upgrades are not existing functionalities that are being automated by some process. They are, in deed, new functionalities over the prior art.

Applicant describes the easily upgradeable path to switch between a broadcast architecture and a blocking architecture as well as a strategy for recovering previously inaccessible capacity, all without service interruptions or shutdowns. This is not mere automation of known functionalities, but additional functionality not known in the art at the time of the invention. The underlying architecture of the present invention is an upgradeable architecture that may be upgraded without requiring that the optical node be shut down and without service disruptions.

Since a second optical filter is optionally added at the second output port from the coupler at the time of an upgrade or maintenance, the upgrade or maintenance may be made without requiring that the optical node be shut down and without service disruptions. This is not automation, as in *In re Venner*, because the process was not being done manually beforehand. In *In re Venner* the use of a timer and a solenoid actually automated a known manual function, releasing a mold after a certain amount of time had passed, and did not add any new functionality. The present invention, on the other hand, is not merely automating a known manual process, but is rather adding new functionality.

Additionally, the present invention discloses a second output port on the through path coupler that is initially left unconnected, creating an upgrade path for use at some point in time in the future, wherein an upgraded optical filter (such as a spectral blocking optical filter or a reconfigurable spectral blocking optical filter) may be added for the upgrade. It is this availability of the second path that enables an upgrade to take place without disruption of service. This is not taught or suggested by Xiao et al. Xiao et al. do not teach or suggest a second output port on the through path coupler that is initially left unconnected. Additionally, Xiao et al. do not teach or suggest a second optical filter than can be added that is an upgraded optical filter relative to the first optical filter, such as a spectral blocking filter (see Xiao et al. Figure 4, elements 406a and 406b, and Paragraphs 20-26, wherein no mention is made of a second output port left unconnected,

nor is any mention made of a second optical filter 406b that has upgraded characteristics relative to the first optical filter 406a).

Thus, Xiao et al. fail to teach or suggest that the optical node apparatus is reconfigurable while in-service and comprises connections to permit an in-service upgrade from a broadcast architecture to a spectrally blocking architecture, permitting spectral wavelength reuse in subsequent portions of a network; and wherein the optical node apparatus comprises connections to permit in-service maintenance. Furthermore, since the present invention discloses new functionality, not mere automation of previously exiting manual processes, it would not have been obvious to one of ordinary skill in the art at the time of the invention to automate the optical node apparatus of Xiao et al. as Examiner states.

Claims 2-12 are dependent claims either directly or ultimately dependent on Claim 1. Based on the same unique and novel features of the present invention as described above, namely that, as amended, Claim 1 has unique and patentable novel features, precisely that the claim provides an optical node apparatus that is reconfigurable and/or maintainable while in-service, permitting an in-service upgrade from a broadcast architecture to a spectrally blocking architecture and permitting spectral wavelength reuse in subsequent portions of a network, it is respectfully asserted that these dependent claims are now in condition for allowance.

Claims 14-16 are dependent claims either directly or ultimately dependent on Claim 13. Based on the same unique and novel features of the present invention as described above, namely that, as amended, Claim 13 has unique and patentable novel features, it is respectfully asserted that these dependent claims are now in condition for allowance.

The differences between the invention of Xiao et al. and the invention of the present Application is now made explicit in amended Claim 1 and Claim 13. Therefore, Applicant submits that the rejection of Claims 1-10 and 12-15 under 35 U.S.C. 103(a) as being rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. has now been overcome and respectfully requests that this rejection be withdrawn.

Rejection of Claims 11 and 16 Under 35 U.S.C. 103(a) - Xiao et al. and Moon et al.:

Claims 11 and 16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. in view of Moon et al. (US Publication 2003/0184843).

Specifically, Examiner states that, regarding Claims 11 and 16, Xiao et al. teach the limitations of the base Claims 9 and 14, respectively. Examiner states that although Xiao et al. do not teach or suggest that the spectral blocking filter is a reconfigurable blocking filter, Moon et al., teach a reconfigurable blocking filter (Figures 1-3, 6-11, 17-24 and 27-29, abstract, page 1, paragraph 3, and page 11, claim 4). Examiner states that it would have been obvious to one of ordinary skill in the art at the time of the invention to include the reconfigurable blocking filter of Moon et al. in the optical node apparatus (fiber transmission system) of Xiao et al. The motivation would have been to selectively delete individual channels within the signal (Moon et al., page 1, paragraph 3, and Xiao et al., page 1, paragraph 6).

The above arguments with respect to Xiao et al. apply with equal force here, and these deficiencies are not remedied by Moon et al.

Therefore, Applicant submits that the rejection of Claims 11 and 16 under 35 U.S.C. 103(a) as being unpatentable over Xiao et al. in view of Moon et al. has now been overcome and respectfully requests that this rejection be withdrawn.

CONCLUSION

Applicant would like to thank Examiner for the attention and consideration accorded the present Application. Should Examiner determine that any further action is necessary to place the Application in condition for allowance, Examiner is encouraged to contact undersigned Counsel at the telephone number, facsimile number, address, or email address provided below. It is not believed that any fees for additional claims, extensions of time, or the like are required beyond those that may otherwise be indicated in the documents accompanying this paper. However, if such additional fees are required, Examiner is encouraged to notify undersigned Counsel at Examiner's earliest convenience.

Respectfully submitted,

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